## WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

INTERNATIONAL At Science 1996 (12.09.96)  Solution and Patent Classification 6: C12N 15/54, 9/12, C07K 16/40, A61K 38/45, C12Q 1/48, C12N 15/11  (43) International Publication Date: 19 March 1998 (19.03.98 19.03.98)  (44) International Publication Date: 19 March 1998 (19.03.98)  (54) International Publication Date: 19 March 1998 (19.03.98)  (55) International Application Number: PCT/US97/15923  (56) Priority Data: 10 September 1997 (10.09.97)  (57) Inventors Applicant (for all designated States except US): 1NCYTE PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).  (57) Inventors; and (75) Inventors; and (75) Inventors; Applicants (for US only): AU-YOUNG, Inside Published Publication Date: 19 March 1998 (19.03.98)  (68) International Publication Date: 19 March 1998 (19.03.98)  (74) Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 317-Porter Drive, Palo Alto, CA 94304 (US).  (74) Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 317-Porter Drive, Palo Alto, CA 94304 (US).  (81) Designated States: AT, AU, BR, CA, CH, CN, DE, DK, E, FI, GB, IL, JP, KR, MX, NO, NZ, RU, SE, US, ARIP Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe Patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, Europe Patent (AH, AZ, BY, KG, KZ, M	C12N 15/54, 9/12, C07K 16/40, A61K 38/45, C12Q 1/48, C12N 15/11  21) International Application Number:  PCT/US97/15923  (22) International Filing Date:  10 September 1997 (10.09.97)  (23) Priority Data: 08/712,709  12 September 1996 (12.09.96)  US 60) Parent Application or Grant (63) Related by Continuation 08/712,702 (CIP) US Filed on 12 September 1996 (12.09.96)  (74) Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US).  (74) Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US).  (75) International Application Date:  19 March 1998 (19.03.98)  19 March 1998 (19.03.98)  19 March 1998 (19.03.98)  19 March 1998 (19.03.98)  10 Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US).  (76) Parent Application or Grant (63) Related by Continuation 08/712,702 (CIP) US Filed on 12 September 1996 (12.09.96) Published Without international search report and to be republished Without international search report and to be republished upon receipt of that report.	PCT WORLD INTELL	Internal	ational Bureau COOPERATION TREATY (PCT)
C12N 15/54, 9/12, C07K 16/40, A61K 38/45, C12Q 1/48, C12N 15/11  (21) International Application Number: PCT/US97/15923 (22) International Filing Date: 10 September 1997 (10.09.97) (23) Priority Data: 08/712,709 12 September 1996 (12.09.96) US 08/712,709 12 September 1996 (12.09.96) (26) Parent Application or Grant (63) Related by Continuation 08/712,702 (CIP) US Filed on 12 September 1996 (12.09.96) (27) Applicant (for all designated States except US): INCYTE PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).  (43) International Publication Date: 19 March 1998 (19.03.98)  (74) Agent: BILLINGS, Lucy, J., Incyte Pharmaceuticals, Inc., 317. Porter Drive, Palo Alto, CA, CH, CN, DE, DK, E, FI, GB, IL, JP, KR, MX, NO, NZ, RU, SE, US, ARP FI, GB, IL, JP, KR, MX, NO, NZ, RU, SE, US, ARP patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU,	C12N 15/54, 9/12, C07K 16/40, A61K 38/45, C12Q 1/48, C12N 15/11  21) International Application Number:  PCT/US97/15923  (22) International Filing Date:  10 September 1997 (10.09.97)  (23) Priority Data: 08/712,709  12 September 1996 (12.09.96)  (24) Parent Application or Grant (33) Related by Continuation US Filed on  12 September 1996 (12.09.96)  (25) Parent Application or Grant (30) Priority Data: 08/712,702  (27) Applicant (for all designated States except US): PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive. Palo Alto, CA 94304 (US).  (71) Applicant (for all designated States except US): Pharmaceuticals, Inc., 3174  (72) Inventors; and (73) Inventors; and (75) Inventors; and (75) Inventors; and (76) Published  (77) Guident (for US only): Published  (77) Inventors; and (78) Quegeter, Karl, J. (CHUS]; 1048 Oakand Avenue, (US). GUEGLER, Karl, J. (CHUS]; 1048 Oakand Avenue, (US). GUEGLER, Karl, J. (CHUS]; 1048 Oakand Avenue, (US). HAWKINS, Phillip, R. Menlo Park, CA 94025 (US). HAWKINS, Phillip, R. Menlo Park, CA 94025 (US). Shoreline Boulevard #96, Mountain View,	TONAL APPLICATION PUBLISH	HED U	UNDER THE PATENT COOPERATE WO 98/11234
21) International Application Number:  PCT/US97/15923  21) International Application Number:  PCT/US97/15923  22) International Filing Date:  10 September 1997 (10.09.97)  (22) International Filing Date:  10 September 1997 (10.09.97)  (23) Priority Data:  12 September 1996 (12.09.96)  US  (24) Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 317.  Porter Drive, Palo Alto, CA 94304 (US).  (85) Porter Drive, Palo Alto, CA 94304 (US).  (86) Parent Application or Grant  (87) Related by Continuation  US  12 September 1996 (12.09.96)  US  13 September 1996 (12.09.96)  US  14 September 1996 (12.09.96)  US  15 September 1996 (12.09.96)  US  16 Published  Without international search report and to be republis upon receipt of that report.  (77) Applicant (for all designated States except US): INCYTE  PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).  (78) Inventors; and  (79) Inventors; and  (79) Inventors; Applicants (for US only): AU-YOUNG, Janice (US/US]; 1419 Kains Avenue, Mountain View, CA 94702 (US/US]; 1419 Kains Avenue, Mountain View, Palion, R.	21) International Application Number: PCT/US97/15923  21) International Application Number: PCT/US97/15923  (22) International Filing Date: 10 September 1997 (10.09.97)  (23) Priority Data: 12 September 1996 (12.09.96) US 08/712,709 12 September 1996 (12.09.96) US 610 Parent Application or Grant 63) Related by Continuation 08/712,702 (CIP) US 12 September 1996 (12.09.96)  (24) Agent: BILLINGS, Lucy, J.; Incyte Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US).  (25) International Application or Grant 12 September 1996 (12.09.96) US 12 September 1996 (12.09.96) US 610 Parent Application or Grant 13 September 1996 (12.09.96) US 610 Parent Application or Grant 63) Related by Continuation 08/712,702 (CIP) US 610 Pharmaceuticals, Inc., 3174 Porter Drive, Palo Alto, CA 94304 (US).  (76) Parent Application or Grant 14 September 1996 (12.09.96) Published Without international search report and to be republished Without in	- Datent Classification	1 1	1 L 1008 / 10 03 97
21) International Application Number: PC1/US9/1/3/25  22) International Filing Date: 10 September 1997 (10.09.97)  23) International Filing Date: 10 September 1997 (10.09.97)  24) International Filing Date: 10 September 1997 (10.09.97)  25) International Filing Date: 10 September 1997 (10.09.97)  26) Priority Data: 12 September 1996 (12.09.96)  27) International Filing Date: 10 September 1996 (12.09.96)  28) International Filing Date: 10 September 1997 (10.09.97)  29) International Filing Date: 10 September 1997 (10.09.97)  20) Priority Data: 12 September 1996 (12.09.96)  21 September 1996 (12.09.96)  22 September 1996 (12.09.96)  23 September 1996 (12.09.96)  24 September 1996 (12.09.96)  25 September 1996 (12.09.96)  26 September 1996 (12.09.96)  27 September 1996 (12.09.96)  28 September 1996 (12.09.96)  29 Published  Without international search report and to be republis upon receipt of that report.  29 Inventors; and (75) Inventors; and (75) Inventors/Applicants (for US only): AU-YOUNG, Janice (US/US): 1419 Kains Avenue, Mountain View, CA 94702 (US/US): 1419 Kains Avenue, Mountain View, C	21) International Application Number: PCT/US97/13725  22) International Filing Date: 10 September 1997 (10.09.97)  22) International Filing Date: 10 September 1997 (10.09.97)  23) Priority Data: 08/712,709 12 September 1996 (12.09.96) US 08/712,709 12 September 1996 (12.09.96)  24) Parent Application or Grant (63) Related by Continuation US 12 September 1996 (12.09.96)  25 Filed on 12 September 1996 (12.09.96)  26 Filed on 12 September 1996 (12.09.96)  27 Filed on 12 September 1996 (12.09.96)  28 Filed on 12 September 1996 (12.09.96)  29 Porter Differ. Adv., BR, CA, CH, CN, DE, DK, ES, FI, FR, GB, IL, JP, KR, MX, NO, NZ, RU, SE, US, ARIPO patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent (AH, AZ, BY, KG, KZ, MD, RU, TJ, TM, European patent	C12N 15/54, 9/12, C07K 10/40, 710/20 38/45, C12Q 1/48, C12N 15/11		1: Incyte Pharmaceuticals, Inc., 317
(60) Parent Application or Grant (63) Related by Continuation US Filed on 12 September 1996 (12.09.96) Filed on 12 September 1996 (12.09.96) Filed on 13 September 1996 (12.09.96) Filed on 14 September 1996 (12.09.96) Filed on 15 September 1996 (12.09.96) Filed on 16 September 1996 (12.09.96) Filed on 17 Applicant (for all designated States except US): INCYTE PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).  (72) Inventors; and (75) Inventors/Applicants (for US only): AU-YOUNG, Janice (175) Inventors/Applicants (for US only): AU-YOUNG, Janice (176) Inventors/Applicants (for US only): AU-YOUNG, Janice (177) Inventors/Applicants (for US only): AU-YOUNG, Janice (178) Inventors/Applicants (for US only): AU-YOUNG, Janice (179) Inventors/Applicants (for US only): AU-YOUNG, Jan	(60) Parent Application or Grant (63) Related by Continuation US Filed on  12 September 1996 (12.09.96) Filed on  (71) Applicant (for all designated States except US): INCYTE PHARMACEUTICALS, INC. [US/US]; 3174 Porter Drive, Palo Alto, CA 94304 (US).  (72) Inventors; and (75) Inventors/Applicants (for US only): AU-YOUNG, Janice (US/US]; 1419 Kains Avenue, Mountain View, CA 94702 (US/US]; 1419 Kains Avenue, Mountain View, CA 94702 (US/US]; 750 N. Shoreline Boulevard #96, Mountain View,	21) International Application Number  22) International Filing Date: 10 September 1997  230) Priority Data: 12 September 1996 (12.09)	(10.09.9	(81) Designated States: AT, AU, BR, CA, CH, CN, DE, DK, EF, GB, IL, JP, KR, MX, NO, NZ, RU, SE, US, ARII patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Euras patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TZ, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TY, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TY, TM), Europe patent (AM, AZ, BY, KG, KZ, MD, RU, TY, TM), Europe patent (AM, AZ, BY, KZ
Palo Alto, CA 94304 (US).  (72) Inventors; and  (75) Inventors/Applicants (for US only): AU-YOUNG, Janice  (US/US]: 1419 Kains Avenue, Mountain View, CA 94702	PHARMACCA 94304 (US).  Palo Alto, CA 94304 (US).  (72) Inventors; and (75) Inventors/Applicants (for US only): AU-YOUNG, Janice (US/US): 1419 Kains Avenue, Mountain View, CA 94702 (US/US): 1419 Kains Avenue, Mountain View, CA 94702 (US). GUEGLER, Karl, J. (CH/US): 1048 Oakland Avenue, (US). GUEGLER, Karl, J. (US). GU	(60) Parent Application or Grant (63) Related by Continuation US Filed on 12 September 199	96 (12.09	(CIP) (CIP) (Published Without international search report and to be republication of that report.
(1)(VI)(S): 750 N. Shorema = 1	CA 94034 (US).	PHARMACOS Palo Alto, CA 94304 (US).  (72) Inventors; and (75) Inventors/Applicants (for US only): AU-YO (US): 1419 Kains Avenue, Mountain Vie (US). GUEGLER, Karl, J. (CH/US); 1048 Oa' (US). GUEGLER, CA 94025 (US). HAWKINS Menlo Park, CA 94025 (US). HAWKINS (US/US): 750 N. Shoreline Boulevard #96, M	OUNG, Sew, CA	Janice 94702 Avenue, lip. R.

## (54) Title: HUMAN PROTEIN KINASES

5,

N PROTEIN KINASES	
NNC ATT CTG GGA CCT GTT CGC AGG ACC GTC CGG TGT TCT GGC CCC CTG ATG TCA	
NNC ATT CTG GGA CCT GTT CGC ROUT  81 90 99 108  72 81 90 CTG CTA AAT ATC TGA CAG CGA AGA TCG CTT GTA	
TCA CGG GCC TGA CTC ACA 31	
CTT CGT GCC CTC GTG AGG CTG GCA TGC AGG	
225 234 243 TTT CGC TGC TCG CTG GCG GAC	
CCT GAC CCA CAG AGG CAT CCC AAC 150  279 288 297 306 315 324  279 288 297 TC CAG ATC GAA AAG AAG ATA GGC CGA GGA CAG TTC AGC GAG GTG TAC AAG GCC  TTC CAG ATC GAA AAG AAG ATA GGC CGA GGA CAG TTC AGC GAG GTG TAC AAG GCC	
TTC CAG ATC GAA AAG AAG ATA GCC CCT  378  378  360  369  378  378  378  378  378  378  378  37	
ACC TGC CTG GAC AGG AAG ACC	;
387 396 405 414 423  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAG ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAG ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAG ATC GGC CTC TTG AAG  ATG ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAC ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAC ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAC ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAC ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAC ATC GGC CTC TTG AAG  ATG ATG GAC GCC AAG GCG AAG CAG GAC TGT GTC AAG GAC ATC GGC CTC TTG AAG	•

The present invention provides novel human protein kinases (HPK) and polynucleotides which identify and encode HPK. The The present invention provides novel human protein kinases (HPK) and polynucleotides which identify and encode HPK. The invention provides for genetically engineered expression vectors and host cells comprising the nucleic acid sequences encoding HPK. The invention also provides for pharmaceutical compositions comprising HPK or antagonists of HPK, and antibodies which specifically bind invention also provides for pharmaceutical compositions comprising HPK for treatment or presention of diseases associated with absorbal traffic Additionally, the invention provides antipope malegales to HPK for treatment or presention of diseases associated with absorbal HPK. Additionally, the invention provides antisense molecules to HPK for treatment or prevention of diseases associated with abnormal

## FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	Fi	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
ΑU	Australia	GA	Gabon	LŸ	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	CH	Ghana	MG	Madagascar	ŤJ	-
BE	Belgium	GN	Guinea	MK	The former Yugoslav	_	Tajikistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TM	Turkmenistan
BG	Bulgaria	HU	Hungary	ML	Mali	TR	Turkey
BJ	Benin	1E	Ireland	MN	Mongolia	TT	Trinidad and Tobago
BR	Brazil	IL	Israel	MR	Mauritania	UA	Ukraine
BY	Belarus	IS	keland	MW	Malawi	UG	Uganda
CA	Canada	IT	Italy	MX	Mexico	US	United States of America
CF	Central African Republic	JР	Japan	NE	Niger	UZ	Uzbekistan
CG	Congo	KE	Kenya	NL	Netherlands	VN	Viet Nam
CH	Switzerland	KG	Kyrgyzstan	NO		YU	Yugoslavia
CI	Côte d'Ivoire	KP	Democratic People's		Norway	ZW	Zimbabwe
CM	Cameroon			NZ	New Zealand		
CN	China	KR	Republic of Korea	PL	Poland		
CU	Cuba	KZ	Republic of Korea	PΥ	Portugal		
cz	Czech Republic	LC	Kazakstan	RO	Romania		
DE	Germany	u	Saint Lucia	RU	Russian Federation		
DK	Denmark	LK	Liechtenstein	SD	Sudan		
EE			Sri Lanka	SE	Sweden		
LL	Estonia	LR	Liberia	SG	Singapore		